

- (h) **Clean Up.** Remove deposits of grout on the pavement or shoulders, and clean the surface before traffic is permitted on the completed sections. Remove other debris, bags, spillage, etc., from the right-of-way each day.
- (i) **Opening to Traffic.** Restrict traffic from the grouted slabs for three days.

**426.05. METHOD OF MEASUREMENT.**

*Core holes* shall be measured by each.

*Portland cement* incorporated into the grouting mix will be measured by the ton (metric ton).

*Fly ash* incorporated into the grouting mix will be measured by the ton (metric ton).

*Water* used in the grout mix will not be measured for payment.

**426.06. BASIS OF PAYMENT.**

The accepted quantities of cored holes, portland cement and fly ash, measured as provided above, will be paid for at the contract unit price as follows:

- (A) CORED HOLES ..... EACH
- (B) PORTLAND CEMENT ..... TON (METRIC TON)
- (C) FLY ASH ..... TON (METRIC TON)

Such payment shall be full compensation for furnishing all materials, equipment, labor and incidentals to complete the work as specified.

**SECTION 433****RUBBLIZING PORTLAND CEMENT CONCRETE PAVEMENT****433.01. DESCRIPTION.**

This work shall consist of rubblizing and seating existing portland cement concrete (PCC) pavement.

**433.03. EQUIPMENT.**

- (a) **Pavement Breaker.** Rubblizing shall be accomplished with a self-contained, self-propelled, resonant frequency pavement rubblizing unit capable of producing low amplitude 2000 pound ( 9 kN) force blows at a rate of not less than 44 cycles per second. The unit shall also be equipped with a water mist system to suppress dust generated by the operation. The rubblizing unit shall be capable of delivering such energy as may be necessary to satisfactorily fracture the pavement. A screen satisfactory to the Engineer shall be provided to protect vehicles in the adjacent lane from flying chips during the fracturing process when necessary.
- (b) **Roller.** Use a vibratory, steel wheel roller weighing a minimum of 10 tons (9 metric tons) to compact the rubblized pavement. The self-propelled unit shall be capable of varying both the vibration amplitude and frequency.

**433.04. CONSTRUCTION METHODS.**

- (a) **General.** Rubblize and seat portland cement concrete pavement across the full depth and panel width of the pavement. A joint shall either be saw cut full depth or load transfer devices shall be severed at an existing joint on ramps or mainline where rubblizing abuts PCC pavement which is to remain in place.

Except at restricted crossover and ramp crossings, have the full overlay in place prior to opening to traffic.

Exercise care during rubblizing and seating by operating the resonant breaker at a maximum amplitude of 1 inch (25 mm) for the protection and prevention of damage to underground utilities and drainage facilities.

Any asphalt pavement patch with a surface area of one square meter or larger shall be removed full depth and replaced with traffic-bound surface course Type E meeting the requirements of Subsection 703.03 and/or material as specified on the Plans. Measurement and payment will be in accordance with Section 403.

Remove any asphalt pavement overlay down to the concrete pavement.

- (b) **Rubblizing of Portland Cement Concrete Pavement.** Break the existing portland cement concrete pavement so that the majority of the pavement material shall be generally of 6 inch (150 mm) size or smaller, with no more than 20 percent of the material larger than 6 inches (150 mm), and no individual fragments larger than 8 inches (200 mm). The extent of the breakage will be based on cracks visible to unaided normal vision when the pavement surface is dry.

*NOTE: The use of water to detect additional cracks will not be permitted.*

Begin rubblizing at the edge of pavement and proceed toward the longitudinal centerline of the road. In areas where the roadway must be overlaid one lane at a time, extend initial rubblizing a minimum of 6 inches (150 mm) beyond the width of the pavement to be overlaid.

In areas where the pavement cannot be rubblized as specified, remove the pavement, undercut by 2 feet (600 mm), and replace with compacted aggregate base.

Debond steel reinforcement from the pavement, and leave it in place. Cut any exposed steel below the surface.

Continuously monitor the rubblizing operation, and make adjustments in the striking pattern, striking energy, number of passes, or other factors as necessary to continually achieve acceptable fracturing throughout the project.

- (c) **Test Section.** Before rubblizing operations begin, the Engineer will designate a test section. Rubblize the test section using varying energy and striking patterns and, if necessary, repeated passes of the equipment over the pavement until the test section is acceptably fractured as specified in Subsection (b) above. The extent of breakage of the test section shall be used as a guide for breaking the pavement on the remainder of the project. The Engineer may require additional test sections at any time during the course of the work that the size requirements are not being met.

- (d) **Seating of Rubblized Portland Cement Concrete Pavement.** After rubblizing, seat the broken concrete by rolling it with the steel wheel roller with at least three passes in the vibratory mode at a maximum speed of 4 mph(6 km/H). Additional passes may be required by The Engineer for sufficient compaction.
- (e) **Leveling Course.** The placement of an asphalt concrete pavement leveling or base course as may be designated on the Plans, for the type specified under other items of work, shall follow the pavement rubblizing and seating operation as closely as is practical.

#### **433.05. METHOD OF MEASUREMENT.**

*Rubblizing pavement* will be measured in square yards (square meters). The width will be the actual width of the existing portland cement concrete pavement, and the length will be measured horizontally along the centerline of each roadway or ramp.

#### **433.06. BASIS OF PAYMENT.**

Accepted quantities of rubblizing and seating portland cement concrete pavement, measured as provided above, will be paid for at the contract unit price as follows:

RUBBLIZING PAVEMENT ..... SQUARE YARD (SQUARE METER)

Such payment shall be full compensation for furnishing all labor, equipment, materials, and incidentals necessary to acceptably rubblize and seat the existing portland cement concrete pavement and suppress dust until the initial leveling course or base is placed.